

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. **(Currently Amended)** A thermal focusing device comprising[:] a plurality of plates and a temperature reduction means, wherein:

the plates are bonded together and at least one channel with an entrance and exit is formed within; and

the [a] temperature reduction ~~module~~ means cools a first channel of the at least one channel so as to trap a gas sample within the first channel, the temperature reduction means being in thermal contact with at least one plate.

2. **(Currently Amended)** A thermal focusing device according to claim 1, wherein the plurality of plates includes:

a first plate having a first surface with a first groove ~~etched~~ formed therein; and

a second plate having a second surface, [and] wherein the first and second surfaces are bonded together [and] so that the first groove forms a first channel of the at least one channel.

3. **(Currently Amended)** A thermal focusing device according to claim 2, wherein:

the second surface has a second groove ~~etched~~ formed therein; and

the first and second grooves face each other forming the first channel ~~when the first and second surfaces are bonded together.~~

4. **(Currently Amended)** A thermal focusing device according to claim 3, wherein:

the first surface has a third groove ~~etched~~ formed therein [and];

the second surface has a fourth groove ~~etched~~ formed therein; and

~~wherein~~ the third groove faces the fourth groove ~~and forms~~ so as to form a second channel when the surfaces are bonded together.

5. **(Currently Amended)** A thermal focusing device ~~according to claim 1,~~
~~wherein the~~ comprising a plurality of plates and a means for temperature reduction in thermal
contact with at least one plate, wherein includes:

a first plate ~~having~~ has a first surface ~~with a first groove etched therein;~~

a second plate ~~having~~ has a second and a third surface, ~~and wherein;~~

the second surface is bonded to the first surface ~~and the~~ so that a first groove
in the second surface forms a first channel, ~~and wherein;~~

the third surface has a second groove ~~etched therein;~~ and[,]

a third plate ~~having~~ has a fourth surface that is bonded to the third surface ~~and~~
~~wherein~~ so that the second groove forms a second channel.

6. **(Original)** A thermal focusing device according to claim 1, wherein one or more of the channels is coated with an inert substance.

7. **(Original)** A thermal focusing device according to claim 1, wherein one of said channels contains a stationary phase substance.

8. (Original) A thermal focusing device according to claim 1, wherein one of said channels is coated with an inert substance and contains one of a liquid stationary phase substance and a solid stationary phase substance.

9. (Currently Amended) A thermal focusing device according to claim 1, ~~wherein the temperature reduction means comprises further comprising~~ an electro-thermal device ~~in thermal contact with at least one of said plates.~~

10. (Currently Amended) A thermal focusing device according to claim 1, wherein the temperature reduction ~~module~~ means includes an enclosed channel of the at least one channel for conveying one of a cryogen and a coolant through ~~in~~ at least one of said plates.

11. (Currently Amended) ~~The gas phase~~ A thermal focusing device according to claim [1] 10, wherein:

~~the temperature reduction module includes an~~ enclosed channel is for conveying ~~a coolant in the cryogen through the~~ at least one of [the] said plates; and

the enclosed channel includes a cryogen expansion zone.

12. (Currently Amended) ~~The gas phase~~ A thermal focusing device according to claim 10 further comprising [a] heating ~~module~~ means for heating and desorbing the trapped sample, the heating means being in thermal contact with at least one plate.

13. (Currently Amended) ~~The gas phase~~ A thermal focusing device according to claim 12, wherein the heating ~~module is~~ means includes at least one of a heating ~~element~~ cartridge and a heat trace integrally formed with the plurality of plates.

14. (Currently Amended) ~~The gas phase~~ A thermal focusing device according to claim 12, wherein:

the at least one plate is formed of an ~~heating module comprises~~ electrically conductive material; and

integral with at least one of the plates, and wherein the heating means includes an electric current source configured to pass an electric current ~~is applied~~ through the at least one plate.

15. (Currently Amended) ~~The gas phase~~ A thermal focusing device according to claim 12, wherein:

the temperature reduction ~~module~~ means and the heating ~~module is~~ means are comprised of a vortex tube;

~~wherein the~~ temperature reduction is accomplished by [the] a cold airstream [of] from the vortex tube; and

[the] heating is accomplished by [the] a hot airstream [of] from the vortex tube.

16. (Currently Amended) A thermal focusing device comprising:

a middle plate with a first surface and a second surface and with material completely removed from between the first and second surfaces of the middle plate to form a continuous pathway with a beginning and an end;

two substantially solid endplates bonded to the middle plate, wherein one endplate is bonded to the first surface and the other endplate is bonded to the second surface and wherein a channel formed within ~~from~~ forms the continuous pathway; and

a temperature reduction means in thermal contact with at least one plate to trap a gas sample in the continuous pathway.

17. **(Currently Amended)** The thermal focusing device according to claim 16 wherein:

the beginning of the pathway is in the center of the middle plate [and];

the end of the pathway is at an outer edge of the middle plate;[,] and

~~wherein~~ one end plate has [a] an aperture ~~in the middle~~ aligned with the beginning of the pathway.

18. **(Currently Amended)** A ~~gas-chromatography~~ thermal focusing device comprising:

a first plate having a first surface;

a second plate having a second surface that is bonded to the first surface, wherein at least one of the first surface and the second surface has a first groove formed therein so that the bonded first and second plates form a corresponding first channel;

a third plate having a third surface that is bonded to a fourth surface of the second plate, wherein at least one of the third surface and the fourth surface has a second groove formed therein so that the second and third plates bonded at the third and fourth surfaces form a corresponding second channel;

~~a temperature modulator, wherein said temperature modulator is capable of~~
means for cooling at least one of the said bonding plates to trap a gas sample in the first
channel[.]; and[,]

a heating means in thermal contact with at least one plate.

19. **(Currently Amended)** A ~~gas chromatography~~ thermal focusing device according to claim [1] 18, wherein the second plate has at least one aperture therethrough arranged to permit communication between the first and second channels forming one continuous channel.

20. **(Currently Amended)** A ~~gas chromatography~~ thermal focusing device according to claim 19 wherein the channel is coated with an inert substance.

21. **(New)** A thermal focusing device according to claim 2, further comprising a third plate, wherein:

the second plate has a third surface with a second groove formed therein;

the third plate has a fourth surface; and

the third and fourth surfaces are bonded together so that so that the second groove forms a second channel of the at least one channel.

22. **(New)** A thermal focusing device according to claim 3, further comprising a third plate, wherein:

the second plate has a third surface with a third groove formed therein;

the third plate has a fourth surface; and

the third and fourth surfaces are bonded together so that so that the second groove forms a second channel of the at least one channel.

23. (New) A thermal focusing device according to claim 2, further comprising a third plate, wherein:

the second plate has a third surface;

the third plate has a fourth surface with a second groove formed therein; and

the third and fourth surfaces are bonded together so that so that the third groove forms a second channel of the at least one channel.

24. (New) A thermal focusing device according to claim 3, further comprising a third plate, wherein:

the second plate has a third surface;

the third plate has a fourth surface with a third groove formed therein; and

the third and fourth surfaces are bonded together so that so that the third groove forms a second channel of the at least one channel.

25. (New) A method comprising:

passing a first fluid through a first channel in a device, the first fluid being one of a cryogen and a coolant; and

trapping a gas sample within a second channel in the device.

26. (New) A method according to claim 25, wherein:
the first fluid is the cryogen; and
the passing of the first fluid through the first channel includes expanding the cryogen within the first channel.
27. (New) A method according to claim 25, further comprising desorbing the gas sample from the second channel.
28. (New) A method according to claim 27, wherein the desorbing of the gas sample includes heating the device.
29. (New) A method according to claim 28, wherein the heating of the device includes passing an electric current through the device.
30. (New) A method according to claim 28, wherein:
the heating of the device includes passing a second fluid through a third channel in the device;
the second fluid is hotter than the first fluid;
the passing of the first fluid ceases at or before the passing of the second fluid begins.